

somewhat local, species in California. It flies in the hot sunshine and seems to have a preference for open plots in wooded localities and along the roadsides. Professor French, in his paper already alluded to, has fully described the preparatory stages, there being but one brood a year. The food-plant is *Pentstemon* and Professor French has also fed the larvæ on *Ribes aureum* (Missouri Currant). In fact, the larvæ, like other *Arctians*, should prove to be quite general feeders. About San Francisco Bay, the adult insect emerges in late April and May. I have taken specimens in the Sierra Nevadas in Placer County, early in April.

REVIEWS.

Meunier, F. Monographie der Leptiden und der Phoriden des Bernsteins. Jahrb. d. königl. Preuss. Geolog. Landenanstalt, Vol. 30, pp. 64-90, pls. 3-7. Berlin, 1909.

Meunier has given in the present paper descriptions of a number of species of Leptidæ and Phoridæ (principally the latter) occurring in Baltic Amber. Of Leptidæ, he recognizes two genera, *Leptis* and *Atherix*, seven species of the former and three of the latter, while in the Phoridæ three genera are recorded, *Phora*, *Aphiochæta* and *Conicera* with fourteen, five and one species respectively. A comparison of the Phorids with recent species is rather difficult as their describer fails to mention many of the characters used for the separation of living forms, and lays great stress upon the comparative length of the tarsal joints which have not been hitherto extensively used in the classification of recent species.

There are several species, however, which are of especial interest. One, *Phora vineta* Meun. resembles greatly in the armature of the legs, species of the section *Dorniphora* Dahl, represented in both the American and the Malayan regions and the antiquity of this very minor group may explain its present wide distribution. Another, *Phora concinna*¹ has a peculiar flattened space on the hind tibia resembling a structure seen in certain Platypezidæ and Dolichopodidæ, but known among the Phoridæ only in three species of Aphiochæta (*A. smithii* Brues from America and *A. hirtiventris* Wood, and *A. derasa* Wood from Europe). Five tolerably well executed plates accompany the paper.

C. T. BRUES.

Banks, Nathan. Catalogue of Nearctic Spiders. Bull. U. S. National Museum, No. 72, pp. 80. Washington, 1910.

The little attention which systematic zoölogists have bestowed upon spiders in this country has undoubtedly been due in great measure to the

¹Not the *Phora concinna* of Meigen (1830) which is a common European species, and entirely different from this one to which Meunier inadvertently gives the same name.

lack of a satisfactory catalogue of the group. This want has been filled in the present paper which should serve to call the attention of entomologists to this interesting group of Arthropods as well as to furnish them with some basis for taxonomic work. Although, as the author says, the catalogue presents no changes in nomenclature or classification it cannot fail to find a field of usefulness. Over 1300 species are included, belonging to nearly 275 genera in 28 families.

C. T. BRUES.

Howard, L. O. Preventive and Remedial Work against Mosquitoes. Bull. U. S. Bureau of Entomology, No. 88, pp. 126 (June, 1910).

This is a very complete account of the methods of mosquito prevention and destruction, and also contains a most instructive account of the results accomplished by mosquito crusades in a number of countries. Attention is called particularly to the fact that while the United States has done much toward exterminating mosquitoes in Cuba and the Canal Zone, measures relating to mosquito control within its own territory have been received with most deplorable indifference.

C. T. BRUES.

Snodgrass, R. E. The Anatomy of the Honey Bee. Bull. U. S. Bureau of Entomology, Tech. Ser., No. 18, pp. 162, fig. 57.

Aside from its especial usefulness to those interested in bee-keeping, the present account will be of value to many others on account of its most excellent illustrations and good descriptions of both the external and internal anatomy. The several parts of the paper are preceded by short general considerations of the structure of more generalized insects, which will serve to make the whole intelligible to those unfamiliar with insect anatomy.

C. T. BRUES.

Forbes, William T. M. A Structural Study of Some Caterpillars. Ann. Entom. Soc. Amer., Vol. 3, No. 2, pp. 94-132, pls. X-XX.

This is a systematic account of the characters present in the caterpillars of a large series of Lepidoptera belonging to many families. The major part of both text and illustrations deals with the comparative external anatomy of the head and the disposition of its setæ, although some attention has been given to the body setæ and armature of the prolegs. The author finds many useful classificatory characters and reaches a number of conclusions regarding the phylogeny and relationships of certain of families and genera.

C. T. BRUES.

Muttkowski, Richard A. Catalogue of the Odonata of North America. Bull. Public Museum, Milwaukee, Vol. I, pp. 207.

This important catalogue adds another group of considerable size to the series of North American insects which have been listed within the past few years and forms a welcome addition. Although the list primarily includes only Nearctic species found north of Mexico, a number of Mexican and all Cuban species are included, the southern limit being placed at 20° latitude, which, with a few exceptions, the author believes "closely approximates the natural zoogeographical limit." Such a treatment should avoid the omission of many species found in the southwestern states, as

these become more thoroughly explored. Nearly 500 forms are included with full synonymic references and also an extensive series of ethological references. Useful innovations are the citation of the present location of all types, so far as this could be ascertained; the mention of both actual places of capture of species and their zonal distribution; and the listing in a separate series of all fossil species. Matters of nomenclature have been dealt with by a conservative application of the International Zoological Code.

C. T. BRUES.

Hewitt, C. Gordon. *The House Fly; A Study of Its Structure, Development, Bionomics and Economy.* pp. ix, 195; pls. 10. Manchester, 1910. Sherratt and Hughes.

Doctor Hewitt has put together in the present book his three valuable papers on the house fly, which appeared in the *Quarterly Journal of Microscopical Science* during 1907, 1908 and 1909, and has added several short appendices dealing mainly with matters of practical importance. The appearance of this book just at present is very timely, when general interest is awakening in the economic importance of the house fly and it is to be hoped that Doctor Hewitt's fine work may find many appreciative readers.

C. T. BRUES.

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